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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/871,581	05/31/2001	Ashvin H. Chheda	13277RRUS01U	3466
7590		10/21/2004	EXAMINER	
Garlick & Harrison		DUONG, FRANK		
P.O. Box 670007		ART UNIT		
Dallas, TX 75367		PAPER NUMBER		
		2666		

DATE MAILED: 10/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/871,581

Applicant(s)

CHHEDA ET AL.

Examiner

Frank Duong

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 May 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 and 29-34 is/are rejected.
- 7) ☒ Claim(s) 6-28 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 May 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>4&19/03</u> | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

1. This Office Action is a response to communication dated 05/31/01. Claims 1-34 are pending in the application.

Information Disclosure Statement

2. The information disclosure statements filed 04/29/03 and 09/16/03 comply with the provisions of 37 CFR 1.97, 1.98 and MPEP § 609. They have been considered and placed in the application file.

Claim Objections

3. Claims 31-32 and 34 are objected to because of the following informalities:

As per claims 31-32, in according to the claim language, they should depend from base claim 29 instead.

As per claim 34, it should depend from base claim 33, rather depending from itself.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-5 and 29-34 are rejected under 35 U.S.C. 102(b) as being anticipated by

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Fredrik et al (WO 99/60809) (hereinafter "Fredrik").

Regarding **claim 1**, in accordance with Fredrik reference entirety, Fredrik discloses a method for assigning Orthogonal codes a division multiple network (Fig. 3), comprising:

determining that there need code defined cell area (*page 8, lines 5-6*); and
determining an optimal mobile station whose Orthogonal is to be reused (*page 8, lines 6-10*).

Regarding **claim 2**, in addition to features recited in base claim 1 (see rationales discussed above), Fredrik further discloses defining a plurality of zone (*Fig. 3 and page 6, lines 12-19; three sectors*).

Regarding **claim 3**, in addition to features recited in base claim 3 (see rationales discussed above), Fredrik further discloses statically building a ranked list of zones (weigh applied to each signal path) according to interference there between (*page 6, line 28 to page 7, line16*).

Regarding **claim 4**, in addition to features recited in base claim 2 (see rationales discussed above), Fredrik further discloses statically building a ranked list of zones according to angular separation (*beam forming unit 440*) (*page 6, line 28 to page 7, line16*).

Regarding **claim 5**, in addition to features recited in base claim 2 (see rationales discussed above), Fredrik further discloses defining a ranked list of zones according to interference between zones and according to angular separation between zones (*page 6, line 28 to page 7, line16*).

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Regarding **claim 29**, in accordance with Fredrik reference entirety, Fredrik discloses a method for assigning an Orthogonal code in a code division multiple access network, comprising:

determining that need exists to reuse an Orthogonal code that already assigned to a mobile station creating a communication channel (*page 8, lines 5-6*);

evaluating at least one of zone interference, zone interference and mobile station characteristics for those mobile stations that already have been assigned Orthogonal code and selecting an Orthogonal code to be reused and assigning the selected Orthogonal code to a mobile station that is requiring an Orthogonal code (*page 8, lines 6-10*).

Regarding **claim 30**, in addition to features recited in base claim 29 (see rationales discussed above), Fredrik further discloses the base station 320 uses spatial information associated with the mobile station's positions to determine which mobile stations should use connections transmitted using codes in the second set. The recitation thereat reads on the claimed limitation in a manner as recited.

Regarding **claim 31**, in addition to features recited in base claim 29 (see rationales discussed above), Fredrik further discloses wherein selecting a donor mobile station includes selecting an Orthogonal code for a mobile station whose location is in a zone that has a significant angular separation from the zone in which a requesting mobile station is located when the requesting mobile station is the one needing to reuse Orthogonal code (*Fig. 5, steps 500, 504, 506 and 508 and page 9, line 23 to page 10, line 7*).

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Regarding **claim 32**, in addition to features recited in base claim 29 (see rationales discussed above), Fredrik further discloses monitoring the Orthogonal code the mobile station characteristics for the two mobile stations using the same Orthogonal code to determine whether a likelihood collision is increasing beyond a specified threshold (*page 10, lines 8-17*).

Regarding **claim 33**, in accordance with Fredrik reference entirety, Fredrik discloses a base station transceiver system (*Fig. 4 and page 6, line 8 to page 7, line 21*) for assigning Orthogonal codes to create communication channels in a code division multiple access network, comprising circuitry for performing routine base station transceiver system operations (*Fig. 4; element 400*); and

logic circuitry (*Fig. 4; element 420*) for selecting an Orthogonal code for reuse from a mobile station located in a cell portion according to the location of the mobile station and specified mobile station characteristics (*page 7, lines 10-16*)

Regarding **claim 34**, in addition to features recited in base claim 33 (see rationales discussed above), Fredrik further discloses wherein the cell portion that is selected for initially evaluating mobile stations for donating their Orthogonal code for reuse includes evaluating the angular separation between the cell portion and a cell portion in which the code is to be reused (*page 7, lines 15-16 and thereafter*).

Allowable Subject Matter

5. Claims 6-28 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

6. The following is a statement of reasons for the indication of allowable subject matter:

The prior art of record, considered individually or in combination, fails to fairly show or suggest the claimed invention of base claim 1 and further limits with a novel and unobvious limitation of "*wherein zones in which side lobes are present for a primary lobe in a zone in which the reused code is to be assigned are eliminated from the ranked list*" and "wherein the need to reuse an Orthogonal code occurs because of a determination that a collision is eminent between the two mobile stations using the same Orthogonal code", structurally and functionally interconnected with other limitations in a manner as recited in the dependent claims 6-18 and 19-28, respectively.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Antonio et al (USP 5,621,752).

Naguib et al, Capacity Improvement with Base-Station Antenna Arrays in Cellular CDMA, IEEE, pages 691-698, 1994.

8. Any inquiry concerning this communication or earlier communications from the

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examiner should be directed to Frank Duong whose telephone number is (571) 272-3164. The examiner can normally be reached on 7:00AM-3:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema Rao can be reached on (571) 272-3174. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'Frank Duong', with a stylized flourish at the end.

Frank Duong
Examiner
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October 12, 2004